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ABSTRACT

The strategy for improving college teaching includes: (a) a method for measuring student learning styles, (b) the design of alternative learning activities for student learning styles, (c) the matching of student learning styles with instructional activities, and (d) a research model for improving college teaching. The Myers-Briggs Type Indicator (MBTI) is a self-administering questionnaire which can be used for measuring student learning styles. Direction of interest, perception, judgment, and life style are measured by the MBTI, and learning styles can be ascertained from these measures. Self-paced learning systems with various learning activities can be adopted. Research at the University of Florida indicates that there is a correlation between a student's score on the MBTI and his preference for college teaching methods and that the individualization of instruction with a variety of learning experiences is a desirable teaching strategy for college teachers. The practical research model for improving college teaching requires research studies which would measure teacher and student learning styles through use of the MBTI. The data gathered from such research could be used by the faculty to design more appropriate learning experiences for students. (HMD)



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A NEW STRATEGY FOR IMPROVING COLLEGE TEACHING

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by

ALBERT SMITH

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FROM THE EDITORIAL BOARD

As Creative Notebook approaches its seventh year of service to college and university presidents the board is pleased to announce a NEW SUBSCRIBER INQUIRY SERVICE. This issue by Dr. Albert Smith was prepared in response to subscriber inquiries for a formula to help improve college teaching. It provides guidelines based on current research, for the following:

- o USING PERSONALITY TYPE INDICATORS TO HELP STUDENTS DETERMINE THEIR MOST EFFECTIVE LEARNING STYLES, E.G., LISTENING, READING, GROUP PROCESS, ETC.
- o USING PERSONALITY TYPE INDICATORS TO HELP FACULTY DETERMINE THEIR MOST EFFECTIVE TEACHING STYLES, TO IMPROVE THEM, AND/OR DEVELOP ALTERNATIVE STYLES.
- o IMPROVING LEARNING BY MATCHING STUDENT LEARNING STYLES WITH APPROPRIATE LEARNING ACTIVITIES.

The 1973-1974 Creative Notebook series of creative action formulas for presidents will feature additional applied research findings on utilizing personality type as a means of improving creativity, leadership, guidance and teaching. We are also preparing reports on the importance of preserving the traditional to assure future generations of the richness of our educational heritage. We look forward to sharing the findings with you.

For the board,

William J. O'Connor
Chairman



1 A METHOD FOR MEASURING STUDENT LEARNING STYLES

One of the most common questions asked by faculty is "HOW CAN I MOTIVATE MY STUDENTS?" One answer to this question may have been found in current research at the University of Florida. ⁽¹⁾ IT IS NOW POSSIBLE FOR FACULTY TO MEASURE STUDENT LEARNING STYLES AND ATTEMPT TO MATCH THESE STYLES WITH APPROPRIATE LEARNING ACTIVITIES. IT IS HYPOTHESIZED THAT SUCH MATCHING MAY PROVE TO BE A KEY TO SELF-MOTIVATION.

One instrument for measuring student learning styles is the Myers-Briggs Type Indicator. The MBTI is a 166 item, self-administering questionnaire published in 1962 by the Educational Testing Service after 20 years of development. The MBTI was designed to implement Jung's theory of psychological types which assumes that "much apparently random variation in human behavior is actually quite orderly and consistent, being due to certain basic differences in the way people prefer to use perception and judgment." ⁽²⁾ Four pairs of preferences are scored to arrive at the subject's type:

1 THE DIRECTION OF INTEREST:

EXTRAVERSION (E) -

DOES THE SUBJECT'S INTEREST FLOW MAINLY
TO THE OUTER WORLD OF ACTION, OBJECTS,
AND PERSONS (E), OR

INTROVERSION (I)

TO THE INNER WORLD OF CONCEPTS AND
IDEAS (I)?



2 PERCEPTION:

SENSING (S) -

DOES THE SUBJECT ATTACH MORE IMPORTANCE TO THE IMMEDIATE REALITIES OF DIRECT EXPERIENCE (S), OR

INTUITION (N)

TO THE INFERRED MEANINGS, RELATIONSHIPS, AND POSSIBILITIES OF EXPERIENCE (N)?

3 JUDGMENT:

THINKING (T) -

IN MAKING JUDGMENTS, DOES THE SUBJECT RELY MORE ON LOGICAL ORDER AND CAUSE AND EFFECT (T), OR

FEELING (F)

ON PRIORITIES BASED ON PERSONAL IMPORTANCE AND VALUES (F)?

4 LIFE STYLE:

JUDGING (J) -

DOES THE SUBJECT PREFER TO LIVE IN THE JUDGING ATTITUDE SYSTEMATICALLY, PLANFULLY, DECIDING WHAT NEEDS TO BE DONE AND ATTEMPTING TO CONTROL EVENTS (J), OR,

PERCEPTION (P)

IN THE PERCEPTIVE ATTITUDE, SPONTANEOUSLY, CURIOUSLY, AWAITING EVENTS AND ADAPTING TO THEM (P)? (3)

Figure 1 depicts a type table that teachers can construct of student types in their classes.

ISTJ	ISFJ	INFJ	INTJ
10	2	2	4
ISTP	ISFP	INFP	INTP
4	4	5	1
ESTP	ESFP	ENFP	ENTP
3	2	5	1
ESTJ	ESFJ	ENFJ	ENTJ
2	3	1	2

Figure 1



The 16 cells in this table represent the various personality type combinations that are possible with the MBTI. The data portrayed in this table was taken from our research with an engineering thermodynamics class at the University of Florida. One can see that a variety of learning styles or types were represented by this one class.

The largest number of students in this class were classified by the MBTI as ISTJ's or INTROVERTED-SENSING-THINKING-JUDGING types. One can begin to see from this table why faculty who rely on one set of learning activities often have difficulty satisfying all of their student's needs. Faculty who focus student attention on facts may be rated very highly by ST and SF students who prefer to see the world in this fashion. In contrast, these same faculty are likely to be less popular with NF and NT students who prefer to focus their attention on possibilities.

HERE ARE 5 STEPS FACULTY COULD FOLLOW IN USING THE MBTI TO MEASURE THEIR OWN AND THEIR STUDENT'S LEARNING STYLES:

- 1 ORDER THE MBTI BOOKLETS AND ANSWER SHEETS FROM THE EDUCATIONAL TESTING SERVICE, PRINCETON, NEW JERSEY.
- 2 TAKE THE MYERS-BRIGGS TYPE INDICATOR PERSONALLY, ANALYZE THE RESULTS, THEN GIVE IT TO YOUR STUDENTS EACH TERM.
- 3 DISCUSS THE IMPLICATIONS OF THE RESULTS WITH YOUR CLASSES. SHOW EACH CLASS THEIR TYPE TABLE AND TALK ABOUT WAYS THAT THE CLASS CAN BE IMPROVED TO MEET INDIVIDUAL LEARNING STYLES.
- 4 HOLD INDIVIDUAL CONFERENCES WITH EACH OF YOUR STUDENTS TO DISCUSS HIS MYERS-BRIGGS TYPE.

PLEASE NOTE: THE UNIVERSITY OF FLORIDA'S TYPOLOGY LABORATORY UNDER THE DIRECTION OF DR. MARY MCCAULLY, WILL SCORE AND PROVIDE YOU WITH COMPUTER-PRINTED PROFILES FOR EACH ONE OF YOUR STUDENTS. THE COST IS APPROXIMATELY \$2 PER STUDENT.



5

COUNSEL STUDENTS INTO LEARNING ACTIVITIES THAT ARE BEST SUITED FOR THEIR LEARNING STYLES, E.G., SENSING (S) TYPES SHOULD LEARN MORE EFFECTIVELY IN LEARNING ENVIRONMENTS WHERE THEY ARE ABLE TO EMPLOY ALL FIVE OF THEIR SENSES.

2 DESIGNING ALTERNATIVE LEARNING ACTIVITIES FOR STUDENT LEARNING STYLES

Once student learning styles have been identified, it will be necessary to develop alternative learning activities. Because the research on college teaching shows that students learn at different rates, it is proposed that self-paced learning systems with various learning options be adopted by college teachers. Such systems will provide students with many options for learning. They will also enable students to move at their own pace without penalty. Today students are penalized by rigid college calendars. Self-paced, modularized instruction could enable students to move as rapidly as they can through the college curriculum.

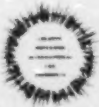
At the University of Florida, Dr. Richard Irey, professor of mechanical engineering, has developed a self-paced thermodynamics class. This course consists of 18 instructional modules or learning packages. Each package contains a variety of learning activities to choose from. Students in this course are able to select the learning activities that best fit their learning styles in each of the modules. Activities for Dr. Irey's course include:

1

UNIT TEXT. A MODULAR TEXT WRITTEN FOR USE WITH THE COURSE. IT PRESENTS THE MATERIAL AND INCLUDES EXAMPLES AND SELF-ASSESSMENT EXERCISES.

2

REFERENCES. EACH MODULE LISTS THOSE PORTIONS OF TEXTS, PROBLEM TEXTS, AND PROGRAMMED TEXTS APPROPRIATE FOR ITS OBJEC-



TIVES. THE TEXTS ARE AVAILABLE ON STUDY TABLES IN A LEARNING LABORATORY.

3

LECTURE-DISCUSSION SESSIONS. STUDENTS ARE GIVEN A WEEKLY SCHEDULE OF DAILY CLASS SESSIONS. EACH SESSION IS DEVOTED TO ONE MODULE. THE SCHEDULE SKIPS AROUND AND REPEATS ITSELF TO FACILITATE DIFFERENT STUDENT RATES OF PROGRESS.

4

HELP SESSIONS. INTERSPERSED WITH THE LECTURES ARE PROBLEM SESSIONS CONDUCTED BY THE TEACHER (ABOUT 2 PROBLEM SESSIONS FOR EVERY LECTURE).

5

AUDIO-TAPE CASSETTE LECTURES. A 30 TO 60 MINUTE CASSETTE-LECTURE IS MADE AVAILABLE FOR 13 OF THE MODULES. STUDENTS COPY A MASTER CASSETTE ON THEIR OWN CASSETTE WITH A HIGH SPEED DUPLICATOR. THE TAPES COULD BE USED IN THE LEARNING LABORATORY OR ELSEWHERE.

6

INDIVIDUAL HELP. STUDENTS ARE ENCOURAGED TO WORK IN THE LEARNING LABORATORY ON THE MODULES. THEY USE ONE ANOTHER, THE MONITORS, AND THE TEACHER FOR INDIVIDUAL HELP IN THE COURSE.

You can no doubt think of other learning alternatives that you could incorporate in your self-paced learning systems.

Each module in Irey's course listed its behavioral objectives and directed the student to appropriate learning activities. The modules were tested with pass/fail proficiency exams (most of which were written but a few were oral). Student monitors, who had taken the course before, graded the proficiency exams, provided immediate oral feedback, and gave specific recommendations to correct learning deficiencies as appropriate.

Overall the students felt that Irey's course with its variety of learning activities to choose from, was more effective than more traditional approaches to instruction. On the course evaluation form, 69 percent of the students responded that they felt that self-paced instruction was more effective than lecture-paced, 27 percent felt it showed that self-paced instruction could be more effective if improved further, and 4 per



cent found self-paced methods to be less effective. Statistical evidence for the effectiveness of the course in terms of student achievement was apparent. Average student scores on the course examinations were 83 out of 100. This average favorably compared to an average score of 59 achieved on similar exams in previous thermodynamics courses taught under a lecture format.

3 MATCHING STUDENT LEARNING STYLES WITH INSTRUCTIONAL ACTIVITIES

The key to effective college teaching, for any teacher, is the matching of students with appropriate learning experiences. A number of authors in the field of higher education have reported research that dispells⁽⁴⁾ the myth that there is one best way to teach. The key to motivating college students according to Carl Rogers (1969) is the placement of the⁽⁵⁾ student in learning activities that are personally meaningful to him.

Recent exploratory research at the University of Florida suggests that there may be relationships between a student's Myers-Briggs Type and his preference for college teaching methods. If these relationships hold up in future research studies across a number of disciplines then we may soon be able to assign students to learning activities on the basis of their personality type or learning style. Some of the associations that we found in our study of Irey's course (N=58) included the following:

- ① INTUITION (N) AS MEASURED BY THE MBTI WAS ASSOCIATED WITH A PREFERENCE FOR SELF-PACED INSTRUCTION TO GROUP-PACED METHODS.
- ② THINKING (T) WAS ASSOCIATED WITH A DESIRE TO LET THE COLLEGE



INSTRUCTOR SET COURSE GOALS AND A PREFERENCE FOR TRADITIONAL METHODS OF INSTRUCTION.

3

PERCEIVING (P) WAS ASSOCIATED WITH A PREFERENCE FOR SELF-PACED INSTRUCTION OVER MORE TRADITIONAL METHODOLOGIES SUCH AS LECTURE COURSES.

4

FEELING (F) WAS ASSOCIATED WITH ATTENDANCE AT COURSE "HELP SESSIONS."

5

BOTH INTUITION (N) AND PERCEPTION (P) WERE ASSOCIATED WITH LATER COURSE COMPLETION DATES, WHILE SENSING (S) AND JUDGING (J) TYPES TENDED TO FINISH THE SELF-PACED COURSE SOONER.

These findings indicate how personality traits or learning styles influence both student attitudes and performances. It was clear from our research that the individualization of instruction with a variety of learning experiences is a desirable teaching strategy for college teachers. A major weakness in college teaching appears to be in the teachers' and students' lack of recognition of each other's preferences and needs for different learning activities.

It would appear that more effective college teaching will evolve if teachers will take the following steps:

STEP 1: DETERMINE STUDENT PREFERENCES FOR VARIOUS LEARNING ACTIVITIES BY ASKING STUDENTS TO DESCRIBE HOW THEY LEARN BEST, I.E., THROUGH FIELD EXPERIENCES, READING, ETC.

STEP 2: WATCH STUDENTS WITH LEARNING ACTIVITIES USING MYERS-BRIGGS TYPE DATA. THEORY PREDICTS THAT SENSING (S) TYPES WHO VALUE SOUNDNESS OF PRECEPTS WILL PREFER TEACHING METHODS THAT RELATE TO PAST EXPERIENCES AND BUILD METHODICALLY STEP BY STEP.

STEP 3: DESIGN ALTERNATIVE LEARNING ACTIVITIES FOR THE VARIETY OF MYERS-BRIGGS TYPES FOUND IN COLLEGE CLASSES. FOR EXAMPLE COLLEGE TEACHERS SHOULD PROVIDE INTUITIVE (I) TYPE STUDENTS WITH OPPORTUNITIES TO WORK



WITH ABSTRACT CONCEPTS, NEW PROBLEMS AND IDEAS. SENSING (S) TYPES WILL PROBABLY BENEFIT FROM A GREATER VARIETY OF "HANDS ON" OR FIELD EXPERIENCE TYPE ACTIVITIES.

Higher faculty evaluations of college teachers are likely to occur if these steps are taken.

4 A PRACTICAL RESEARCH MODEL FOR IMPROVING COLLEGE TEACHING

Often administrators are faced with the question "How can I help faculty improve their teaching?" One way that a college could improve its instruction would be to conduct research studies that would measure teacher and student learning styles. The data gathered from such research could then be used by the faculty to design more appropriate learning experiences for students. Admissions, advising and career guidance could be improved by such a study. Over a period of time the college could develop a data bank of the Myers-Briggs Type characteristics of its students. This data bank could be used to determine the characteristics of students who had a tendency to perform well in various college programs or learning activities. This type of longitudinal research should aid a college in reducing the dropout rate. It should also result in a college-wide effort to place students in motivating learning environments. Finally, by providing students with meaningful learning experiences, faculty evaluations by students could be quite significant.



THESE STEPS ARE RECOMMENDED FOR IMPROVING COLLEGE TEACHING AND FACULTY EVALUATIONS:

- ① USE THE MYERS-BRIGGS TYPE INDICATOR (MBTI) TO TYPE ALL STUDENTS.
- ② USE THE MYERS-BRIGGS TYPE INDICATOR (MBTI) TO TYPE ALL FACULTY.
- ③ COMPARE STUDENT PERFORMANCE IN VARIOUS COURSES BY MBTI.
- ④ IDENTIFY MYERS-BRIGGS TYPES WHO RATE COLLEGE PROGRAMS FAVORABLY AND WHO REMAIN IN THESE PROGRAMS FOR A DEGREE.
- ⑤ IDENTIFY THE STUDENT MYERS-BRIGGS TYPES WITHIN COURSES WHO TEND TO CONSISTENTLY RATE CERTAIN FACULTY HIGHER THAN OTHERS.
- ⑥ BEGIN COUNSELING STUDENTS SUGGESTING VARIOUS PROGRAMS ON THE BASIS OF MYERS-BRIGGS TYPE DATA GATHERED. THIS SHOULD IMPROVE STUDENT RETENTION RATES AND MOTIVATION.
- ⑦ BEGIN ADVISING STUDENTS WITHIN SPECIFIC PROGRAMS AND DEPARTMENTS OR ASSIGNING THEM BASED ON YOUR RESEARCH ACCORDING TO THEIR MYERS-BRIGGS TYPES.

Please note: This should result in higher faculty evaluations throughout a college as students will be working with faculty who possess similar learning styles.

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